



Estimating the Cost to Implement a PLTW Biomedical Sciences Program

The cost to implement a PLTW program will vary from school district to school district. There are multiple reasons for the variation:

- Different schools have varying availability of equipment, supplies, and other materials required to implement the curriculum. The more items already available, the lower the cost will be to implement a program.
- There are three different PLTW STEM programs, each with different equipment requirements and consequent costs.
- There are cost differences between the various course selections within each high school program, as some courses require more expensive equipment. Similarly, there are different costs associated with each of the middle school Gateway To Technology (GTT) units. Schools may select different courses/units.
- The number of class sections offered for each high school course or GTT unit will affect the overall cost to the school.

Therefore the costs presented here are estimates, and in order for schools to determine their actual costs an inventory of existing materials should be taken using the PLTW purchasing manual for the program being implemented. The manuals are available on the PLTW website at <http://www.pltw.org/program-support/2011-2012-purchasing-manual>.

Estimated Cost to Implement the High School Biomedical Sciences Program

Minimum implementation is three courses: Principles of the Biomedical Sciences (PBS), Human Body Systems (HBS), and Medical Interventions (MI). For certification, which allows students to be eligible to earn college credit for the PLTW courses, the school must also offer the capstone course, Biomedical Innovation. Each course is written for 175 days of 45-minute periods. The scheduling can be modified to fit the needs of the school, for example the class can meet for 90-minute periods daily for one semester.

The estimated cost to add PBS, HBS, and MI to a school with an existing life science or biology classroom with access to computers that meet PLTW specifications is \$42,305.

The courses in the Biomedical Sciences Program are sequential; most schools implement the courses over three years. The following items are included in this estimate:

- Two-weeks (80 hours) of Core Training in PBS for one teacher with full room and board
- Two-weeks (80 hours) of Core Training in HBS for one teacher with full room and board
- Two-weeks (80 hours) of Core Training in MI for one teacher with full room and board
- Classroom equipment and consumables for the three courses
- Equipment specific for each of the three courses
- Consumables specific for each of the three courses, enough for at least 20 students
- Required software
- School participation fee for the BMS program

- Access to the curriculum for the three courses, including: teacher notes, lesson plans, key terms with definitions, crosswalks to National Standards, student handouts, instructional PowerPoints, scoring rubrics, and answer keys (provided at no charge to teachers who successfully complete the appropriate Core Training)
- Access to the PLTW Virtual Academy for continuing teacher professional development (provided at no charge to PLTW teachers)
- Access to the teacher discussion forums (provided at no charge to PLTW teachers)
- Access for PLTW students to the Northwest Evaluation Association MAP testing for science and mathematics (currently provided at no charge to PLTW students)
- Access to the End-of-Course Assessment for each course, including the college credit eligibility exam (currently provided at no charge to PLTW students)

The two tables below breakdown the actual costs to equip a BMS classroom and implement the various full-year courses. The classroom equipment and consumables are items that are used in multiple courses and can be used in multiple class sections. Equipment is a one-time purchase, whereas consumables will have to be replenished. The need for replenishment will vary depending on the number of students using the items. The estimate for the classroom consumables assumes four or five classes of 20 students meet in the classroom daily.

Table 1. Breakdown of specific costs to set-up a BMS classroom used for multiple class sections each day. The equipment and consumables are used for activities in multiple courses and are not specific to a course.

BMS Classroom Lab Set-Up Costs	
Software	\$645
Classroom Equipment	\$5,350
Classroom Consumables	\$830
Annual Participation Fee (per school)	\$2,000
Total	\$8,825
Additional costs if:	
Not originally a life science or biology classroom	\$6,010
Need to purchase computers, projector, and printer	\$9,150

Table 2. Breakdown of specific costs to implement each BMS course once the classroom is equipped. These are the costs to purchase the equipment and consumables that are specific for each course, and are in addition to the cost to set-up the BMS classroom. The consumable costs are for a single class section of 20 students.

	Principles of the Biomedical Sciences	Human Body Systems	Medical Interventions	Biomedical Innovation
Teacher Training includes Room & Board	\$3,400	\$3,400	\$3,400	\$3,400
Equipment, course specific	\$6,165	\$8,670	\$5,515	\$30
Consumables, course specific	\$560	\$800	\$1,570	\$380
Total	\$10,125	\$12,870	\$10,485	\$3,810